

hybridizing to a naturally-occurring DNA or mRNA polynucleotide sequence encoding persephin[ to prevent transcription and/or translation of an encoded persephin polypeptide].

31. (Amended) A nucleic acid molecule[An oligonucleotide] comprising at least 15 nucleotides which specifically hybridizes to the nucleic acid molecule or nucleic acid molecule complementary thereto of claim 12.

32. (Amended) A nucleic acid molecule[The oligonucleotide] of claim 31 comprising at least 30 nucleotides.

33. (Amended) A nucleic acid molecule[An oligonucleotide] comprising at least 15 nucleotides of the nucleic acid molecule of nucleic acid molecule complementary thereto of claim 12.

#### REMARKS

Claims 10-15, 26, and 28-40 remain pending in the application. Claims 26 and 31-33 have been amended to more particularly point out and distinctly claim the invention.

Applicants acknowledge the renumbering of claims 13-44 to 9-40. Applicants also note the Appendix attached hereto, which sets forth the correctly numbered claims with the renumbered dependencies, including the present amendments.

In response to the restriction requirement, applicants provisionally elect Group I, with traverse. Applicants assert that amended claims 26 and 31-33 should properly be within Group I. Claim 26 has been amended to eliminate the limitation that the claimed persephin polynucleotide has the purpose of preventing transcription. Without that limitation, the claim is essentially identical to claim 11, because claim 11 (and several other claims) has the limitation that the claimed nucleic acid molecule can hybridize to a known persephin sequence. Claims 31-33 are also similar to, or are encompassed by, several claims in Group I. The four claims of Group II have also been amended to replace the words "polynucleotide" or "oligonucleotide" with "nucleic acid molecule". Applicants do not believe that these latter changes have the effect of changing the scope of the claims, since polynucleotides and oligonucleotides are nucleic acid molecules and those words do not affect the other limitations recited in those claims.

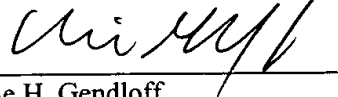
Applicants thus assert that the claims of Group I cannot be distinguished structurally from the claims of Group II. As such, the claimed compositions from both groups can be used in a number of applications, including as antisense nucleotides, as probes in diagnostic assays, as compositions in gene therapy treatments, as probes for isolating persephin sequences from a myriad of

species, as cDNAs for producing persephin polypeptides, etc. etc. In this regard, it is noted that "apparatus claims cover what a device *is*, not what a device *does*." (emphasis in original) Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). In this case, the structural limitations of Group I cannot be distinguished from Group II. Although antisense oligonucleotides tend to be smaller oligonucleotides than cDNAs, gene therapy polynucleotides, etc., this is not always the case, since antisense oligonucleotides can be larger than, e.g., probes.

Based on the above discussion, the claims of Group I do not define an independent and distinct invention from Group II, which is required for restriction under 35 U.S.C. 121. The nucleic acid molecules of Group I are not independent from the nucleic acid molecules of group II, since they are connected in design (i.e., embodiments of each group are encompassed within the other group). The Groups are also not distinct because each is not patentable over the other because they encompass many of the same structures.

Based on the above discussion, applicants hereby request that the restriction requirement be withdrawn and the claims be examined as encompassing the same invention.

Respectfully submitted,



Elie H. Gendloff  
Reg. No. 44,704  
Howell & Haferkamp, L.C.  
7733 Forsyth Boulevard, Suite 1400  
St. Louis, Missouri 63105  
(314) 727-5188

May 1, 2000



## APPENDIX

### U.S. Patent Application 09/220,617 Renumbered claims after amendment of May 1, 2000

10. An isolated and purified nucleic acid molecule or nucleic acid molecule complementary thereto comprising a nucleotide sequence encoding a persephin polypeptide or a fragment of said nucleotide sequence consisting of at least 15 nucleotides, wherein the persephin polypeptide
  - (a) comprises seven canonical framework cysteine residues,
  - (b) has at least 75% sequence identity with SEQ ID NO:221 or SEQ ID NO:223, and
  - (c) promotes survival of mesencephalic neuronal cells.
11. The isolated and purified nucleic acid molecule or nucleic acid molecule complementary thereto of claim 10 wherein the nucleotide sequence or the fragment of said nucleotide sequence or complement thereto specifically hybridizes to SEQ ID NO:183, SEQ ID NO:184, SEQ ID NO:194, SEQ ID NO:195, SEQ ID NO:199, SEQ ID NO:200, SEQ ID NO:201, or SEQ ID NO:202.
12. The isolated and purified nucleic acid molecule or nucleic acid molecule complementary thereto of claim 11 comprising SEQ ID NO:183, SEQ ID NO:194, SEQ ID NO:199 or SEQ ID NO:201.
13. A vector comprising expression regulatory elements operably linked to the nucleic acid molecule, the nucleic acid molecule complementary thereto, or the fragment of claim 10.
14. A host cell transformed with the vector of claim 13.
15. An isolated and purified nucleic acid molecule comprising:
  - (a) a pre-pro persephin nucleotide sequence as set forth in SEQ ID NO:179, SEQ ID NO:180, SEQ ID NO:190, SEQ ID NO:191, SEQ ID NO:203, SEQ ID NO:204, SEQ ID NO:205, or SEQ ID NO:206 or a polynucleotide that specifically hybridizes to SEQ ID NO:179, SEQ ID NO:180, SEQ ID NO:190, SEQ ID NO:191, SEQ ID NO:203, SEQ ID NO:204, SEQ ID NO:205, or SEQ ID NO:206;
  - (b) a pre-pro region of a persephin polynucleotide as set forth in SEQ ID NO:181, SEQ ID NO:182, SEQ ID NO:192, SEQ ID NO:193, SEQ ID NO:213, SEQ ID NO:214, SEQ ID NO:215, or SEQ ID NO:216;
  - (c) a pre- region of a persephin polynucleotide as set forth in SEQ ID NO:207, SEQ ID NO:208, SEQ ID NO:209, or SEQ ID NO:210;

(d) a pro- region of a persephin polynucleotide as set forth in SEQ ID NO:211, or SEQ ID NO:212; or

(e) a fragment thereof comprising at least 15 contiguous nucleotides.

26. An isolated and purified persephin nucleic acid molecule comprising a sequence complementary to a nucleic acid sequence of claim 10 and capable of hybridizing to a naturally-occurring DNA or mRNA polynucleotide sequence encoding persephin.

28. The isolated and purified nucleic acid molecule or nucleic acid molecule complementary thereto of claim 10, wherein the persephin polypeptide comprises SEQ ID NO:223 or a conservatively substituted variant thereof.

29. The isolated and purified nucleic acid molecule or nucleic acid molecule complementary thereto of claim 10, wherein the persephin polypeptide consists of SEQ ID NO:221 or a conservatively substituted variant thereof.

30. The isolated and purified nucleic acid molecule or nucleic acid molecule complementary thereto of claim 28, which specifically hybridizes to SEQ ID NO:183, SEQ ID NO:194, SEQ ID NO:199, or SEQ ID NO:201.

31. A nucleic acid molecule comprising at least 15 nucleotides which specifically hybridizes to the nucleic acid molecule or nucleic acid molecule complementary thereto of claim 12.

32. A nucleic acid molecule of claim 31 comprising at least 30 nucleotides.

33. A nucleic acid molecule comprising at least 15 nucleotides of the nucleic acid molecule of nucleic acid molecule complementary thereto of claim 12.

34. A non-naturally occurring nucleic acid molecule or nucleic acid molecule complementary thereto comprising a nucleotide sequence encoding a polypeptide or a fragment of the nucleotide sequence consisting of at least 15 nucleotides, wherein the polypeptide

(a) comprises seven canonical framework cysteine residues,

(b) has at least 75% sequence identity with SEQ ID NO:221 or SEQ ID NO:223, and

(c) promotes survival of mesencephalic neuronal cells.

35. A vector comprising expression regulatory elements operably linked to the nucleic acid molecule, the nucleic acid molecule complementary thereto, or the fragment of claim 34.

36. A cell which produces the non-naturally occurring nucleic acid molecule or nucleic acid molecule complementary thereto or fragment of claim 34.

37. The nucleic acid molecule or nucleic acid molecule complementary thereto or fragment of claim 34, which specifically hybridizes to SEQ ID NO:183, SEQ ID NO:184, SEQ ID NO:194, SEQ ID NO:195, SEQ ID NO:199, SEQ ID NO:200, SEQ ID NO:201, or SEQ ID NO:202.

38. A vector comprising expression regulatory elements operably linked to the nucleic acid molecule, the nucleic acid molecule complementary thereto, or the fragment of claim 37.

39. A cell transformed with the vector of claim 38.

40. A cell which produces the non-naturally occurring nucleic acid molecule or nucleic acid molecule complementary thereto or fragment of claim 37.